



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,226	02/09/2005	Norbert Lutz	1093-124 PCT/US	1533
23869	7590	10/04/2007		
HOFFMANN & BARON, LLP 6900 JERICHO TURNPIKE SYOSSET, NY 11791			EXAMINER CULLER, JILL E	
			ART UNIT 2854	PAPER NUMBER
			MAIL DATE 10/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,226	Applicant(s) LUTZ, NORBERT	
	Examiner Jill E. Culler	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1,4,5,7-9,11,12,15 and 17-20 is/are rejected.
 7) ☒ Claim(s) 2, 3, 5, 13, 14, 16 and 29 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 09 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-5, 7-12, 15, 17-24, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,858,298 to Humal in view of U.S. Patent No. 3,758,649 to Frattarola and U.S. Patent No. 6,652,273 to Butsch et al.

With respect to claim 1, Humal teaches a process for producing a marking on a substrate, 6, wherein energy in the form of radiation is introduced from a controllable energy source, 33, into surface structurings of a replication surface, 32, of a replication apparatus to produce at least one shaping region, wherein the shaping region of the replication surface is shaped on to the substrate by the replication apparatus contacting the substrate under pressure, and wherein the marking is formed by shaping the shaping region on the substrate, 6, wherein the portion of the replication surface which is in the form of the heated region directly and/or indirectly forms the shaping region. See column 9, lines 1-27 and Fig. 8.

Humal does not teach that the replication surface, is subjected to a temperature control effect at least in a partial region using an additional controllable energy source, wherein an energy input by radiation from the radiation producing energy source and an energy input from the additional controllable energy source is introduced into the

replication surface so that at least one portion of the replication surface is in the form of a heat combination region or wherein at least two portions of the replication surface are set to different temperatures.

Frattarola teaches a process for producing a marking on a substrate, 204, comprising subjecting a replication surface, 222, to a temperature control effect using a controllable energy source, 220. See column 4, lines 33-35 and Fig. 2.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the apparatus of Humal to have the additional temperature control effect of Frattarola to form a heat combination region on at least a part of a replication surface in order to have better control over the temperature of the replication surface.

Butsch et al. teaches a process for controlling the temperature of a surface, 32, wherein at least two portions of the surface are set to different temperatures. See column 2, lines 40-51 and column 10, lines 22-63.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the apparatus of Humal to have the additional temperature control effect of Butsch et al. in order to be able to more accurately control more complicated marking processes.

With respect to claim 4, Humal teaches the radiation introduced to produce the at least one shaping region is fed through the replication apparatus. See column 9, lines 1-27 and Fig. 8.

With respect to claim 5, Humal teaches a rotating replication roller having the replication surface on its outside is used as the replication apparatus and the radiation is introduced into the replication surface of the replication roller before and/or while the heat combination region resulting therefrom comes into contact with the substrate for the shaping operation. See column 9, lines 1-27 and Fig. 8.

With respect to claim 7, Humal teaches that introduction of the radiation into the replication surface of the replication roller is effected at a first angular position of the replication roller and the shaping operation by contact of the replication surface of the replication roller with the substrate is effected at a second angular position of the replication roller. See column 9, lines 1-27 and Fig. 8. Although Humal does not explicitly teach that, in the direction of rotation of the replication roller, an intermediate angle of less than 30 degrees is set between the first angular position and the second angular position, it would have been obvious to one having ordinary skill in the art at the time of the invention that the optimal size of the angle would vary with the particular application and therefore could best be determined through routine experimentation.

With respect to claim 8, Humal teaches the radiation acts over an area and/or in point form sequentially on the replication surface. See column 9, lines 1-27 and Fig. 8.

With respect to claim 9, Humal teaches the position of the impingement point of the radiation on the replication surface is controllable by a one-dimensional or multi-dimensional movement of the radiation and/or the power density in relation to surface area of the radiation at the impingement point of the radiation on the replication surface is controllable. See column 9, lines 1-27 and Fig. 8.

With respect to claim 10, although Humal does not explicitly teach that a control sequence for actuation of the radiation-producing device extends over more than one revolution of the replication roller, it would have been obvious to one having ordinary skill in the art at the time of the invention to control the sequence over more than one revolution of the roller in order to efficiently produce more than one marked substrate in a single process.

With respect to claim 11, Humal teaches an apparatus for producing a marking on a substrate, comprising a replication apparatus which is in the form of a replication roller, 30, wherein a replication surface, 32, having surface structurings, is provided on an outside of the replication roller, a controllable energy source for producing a radiation, 33, wherein the radiation for producing at least one shaping region is directed on to at least one portion of the replication surface, and a counterpressure apparatus which has a counterpressure surface, 31, wherein the substrate is arranged between the replication surface of the replication apparatus and the counterpressure surface of the counterpressure apparatus in order to shape the shaping region on to the substrate in a contact region between the replication surface and the substrate and wherein the marking is formable by shaping the shaping region on the substrate. See column 9, lines 1-27 and Fig. 8.

Humal does not teach that there is provided an additional controllable energy source in the form of an apparatus for temperature control of the replication surface or that at least two portions of the replication surface are settable to different temperatures by an energy input of radiation from the energy source and an energy input from the

heating apparatus into the replication surface so that at least one portion of the replication surface is in the form of a heat combination region, wherein the portion of the replication surface which is in the form of the heat combination region directly and/or indirectly forms the shaping region.

Frattarola teaches an apparatus for producing a marking on a substrate, 204, comprising subjecting a replication surface, 222, to a temperature control effect using a controllable energy source, 220. See column 4, lines 33-35 and Fig. 2.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the apparatus of Humal to have the additional temperature control effect of Frattarola to form a heat combination region on at least a part of a replication surface in order to have better control over the temperature of the shaping region of the replication surface.

Butsch et al. teaches a process for controlling the temperature of a surface, 32, wherein at least two portions of the surface are set to different temperatures. See column 2, lines 40-51 and column 10, lines 22-63.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the apparatus of Humal to have the additional temperature control effect of Butsch et al. in order to be able to more accurately control more complicated marking processes.

With respect to claim 12, Humal teaches the position in which the radiation acts on the portion of the replication surface during the irradiation operation and the position of the contact region between the replication surface and the substrate are arranged in

Art Unit: 2854

overlapping relationship and/or in the direction of rotation of the replication roller with a spacing angle of a magnitude of less than 30.degrees. See column 9, lines 1-27 and Fig. 8.

With respect to claim 15, Humal teaches the counterpressure apparatus is in the form of a counterpressure roller, 31. See column 9, lines 1-27 and Fig. 8.

With respect to claim 17, Humal teaches the device for producing the radiation and/or a beam deflection unit is arranged within the counterpressure apparatus or within the replication roller. See column 9, lines 1-27 and Fig. 8.

With respect to claim 18, Humal teaches the radiation for producing the shaping regions is fed through the substrate.

With respect to 19, Humal does not teach that there is provided an apparatus for temperature control of the replication surface, namely a cooling apparatus for cooling the replication surface.

Frattarola teaches a cooling apparatus, 230, for the marking device. See column 6, lines 40-50.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the apparatus of Humal to have a cooling apparatus, as taught by Frattarola, to cool the replication surface in order to have better control over the temperature of the replication surface.

With respect to claim 20, Humal teaches the heating apparatus is provided for heating the replication surface. See column 9, lines 1-27 and Fig. 8.

With respect to claims 21-24, although Humal does not explicitly teach that a marking comprising surface structurings which act diffractively or holographically, or a matt structure which scatters diffusely or directedly, is producible or produced by the surface structurings of the replication surface, it would have been obvious to one having ordinary skill in the art that the types of markings produced by the apparatus of Humal are merely a choice of design for the desired end result and would not produce a patentable modification of the structure of the apparatus.

With respect to claims 26 and 28, Humal teaches that the energy introduced into the surface structurings of the replication surface is laser radiation energy from a laser installation. See column 3, lines 7-17.

3. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humal in view of Frattarola and Butsch et al. as applied to claims 1, 4-5, 7-12, 15, 17-24, 26 and 28 above, and further in view of U.S. Patent No. 5,744,219 to Tahara.

With respect to claims 25 and 27, Humal, Frattarola and Butsch et al. teach all that is claimed, as in the above rejection of claims 1, 4-5, 7-12, 15, 17-24, 26 and 28, except that the substrate is a transfer film.

Tahara teaches a process and apparatus for producing markings on a substrate wherein the substrate is a transfer film. See column 3, lines 36-43.

It would have been obvious to one having ordinary skill in the art at the time of the invention to further modify the process and apparatus of Humal to have a transfer

film as a substrate, as taught by Tahara, as Tahara teaches a transfer film is a desirable end product for a marking process.

Allowable Subject Matter

4. Claims 2-3, 6, 13-14, 16 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claims 2-3, the prior art does not teach or render obvious a process as claimed, particularly wherein, for the shaping operation, the temperatures of the replication surface inside and outside the heat combination region are explicitly set to temperatures in the plastic, flow or elastic temperature ranges of the substrate.

With respect to claim 6, the prior art does not teach or render obvious a process as claimed, particularly wherein the radiation for producing the at least one shaping region is supplied through a counterpressure apparatus into the replication surface.

With respect to claims 13-14, the prior art does not teach or render obvious an apparatus as claimed, particularly wherein the radiation for producing the at least one shaping region is fed through the counterpressure apparatus, or the counterpressure apparatus is transparent for the radiation.

With respect to claim 16, the prior art does not teach or render obvious an apparatus as claimed, particularly wherein the counterpressure apparatus is completely or portion-wise in the form of a hollow body.

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill E. Culler whose telephone number is (571) 272-2159. The examiner can normally be reached on M-F 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jec

Jill E. Haller
Patent Examiner